



Leveraging Social Media Information Management to Enhance Physical Activity Engagement

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Abstract

By considering contemporary social media strategies and their efficacy in influencing physical activity, this study aims to offer an all-encompassing view on how information is handled and used to promote good habits. The findings suggest that targeting information management strategies can effectively enhance user engagement and motivate individuals to participate in physical activities, thus providing insights for public health campaigns as well as social media marketing. Additionally, this study focuses on the psychological and behavioral mechanisms through which social media influences physical activity. It will look at how customization of content, support networks among friends, and other interactive features found in platforms help in sustaining behavior change. The research emphasizes the significance of tailoring messages for particular demographics while using data analysis to optimize content delivery. This research therefore links theories of behavior change with practical applications of social media, showing a strong framework for using digital platforms towards achieving public health outcomes and fostering a more active society.

Subject Areas

Sports Science

Keywords

Information Management, Social Media, Physical Activity, Engagement, Behavior Change

1. Introduction

1.1. Background on Social Media and Physical Activity

In the past few years, many people have observed that social media is a very useful means of communication which can greatly affect different areas of our life like our health habits [1]. People are becoming more and more inactive in their lifestyles so governments have been thinking of new ideas on how they can encourage individuals to exercise. These websites could be used as an effective tool for promoting good health because they allow us access to such big numbers of people at once.

In addition, social media being interactive in nature means that it can create lively and interesting content which may inspire people to live healthier. Facebook, Instagram, Twitter, TikTok among others, have given users a chance to share their fitness stories; take part in different competitions as well as connect with others who have the same mindset, thereby creating a sense of belongingness and responsibility [2].

1.2. Importance of Promoting Physical Activity through Social Media

Physical fitness is crucial to the overall health of a person. However, even though this has been proven many times over, there are still some people who find it hard to make regular exercise part of their day-to-day life [3]. This is where social media comes in; it could put together motivation content, create supportive communities and send out personalized health messages, too.

On a broad scale, social media platforms can be used as powerful tools for promoting physical activity through public health campaigns. These platforms can draw on influencers, brands and community leaders to ensure that they reach different kinds of individuals including those who may not have a liking for conventional workouts [4]. The fact that feedbacks are given in real-time and people get to interact while using these sites, is also very important because it provides instant reinforcement, which might just be what somebody needs at that time when they are struggling with getting themselves physically active again.

1.3. Research Question and Objectives

This study aims to answer the following research question: How can information management in social media enhance engagement and promote physical activity behavior? The objectives are to:

- 1) Analyze current social media strategies used to promote physical activity.

2) Evaluate the effectiveness of information management in enhancing user engagement.

3) Provide recommendations for optimizing social media strategies to encourage physical activity.

1.4. Overview of Paper Structure

The subsequent segment of this paper will provide a literature review of published works focusing on the use and effectiveness of social media engagement and physical activity promotion, along with the specifications of the employed methodology in this research. In the results section of the laid down proposal above, it will reveal what has been identified regarding the subject matter, which is then argued in relation to existing literature.

After that the analysis of such findings followed by the impact of the observation towards the formulation of strategy in relation to public health and marketing through social media which results in practical approach in using the social media in advocating for physical activities. That is, equally important limitations are identified within our study, thus pointing to specific areas where more studies should be carried out from currently identified findings.

2. Literature Review

2.1. Social Media Engagement and Behavior Change

In the present research study, numerous experiments have highlighted how much the use of social media causes alteration of conduct. Currently, such platforms as Facebook, Twitter and Instagram among others, are more used in passing on facts, creating awareness of health issues and linking health-related groups [5]. Since social media is an interactive platform, people can ask questions and get answers immediately, it's such a prime tool to ensure that accurate messages regarding behavior change are disseminated.

Often, people are encouraged by other users' success stories and improvement in within their online communities. In turn, this tends to boost self-confidence as well as dedication towards personal health goals [6]. Social media challenges and campaigns also use social proof as a tool for motivating people to adopt healthy behaviors; for example, step count competitions or virtual fitness challenges.

2.2. Physical Activity Promotion through Social Media

Studies reveal that physical activity can be effectively promoted by social media campaigns. They generally consist of motivation, challenges and user content created for the purpose of influencing engagement with other [7]. Progress sharing is an example of a fitness challenge that fosters responsibility and support from the community thereby motivating people to keep fit [8]. Apart from motivation and challenges, social media platforms offer personalized training tips as well as instantaneous response, all of which make them more effective in promoting physical exercise.

2.3. Information Management Theories and Practices

Social media information management means having a clear plan for gathering, organizing and sharing data that is meant to achieve particular aims. Proper handling of information guarantees that intended people receive the right message at the correct hour [9]. This involves knowing what users prefer, developing content that suits them, and monitoring their engagement through analytic tools.

This helps to create the kind of relevant content that can appeal to specific groups in the population. Additionally, there is a chance for aligning communication with real-time feedback so as to keep up with the needs and preferences of clients. When introducing information management into an organization, one should utilize a feedback loop system.

2.4. Gaps in Existing Literature

Even though there are plenty of studies dealing with the use of social media in promoting physical activities, how information management fits into such engagement and transformation is still unclear [10]. This study is aimed at addressing this gap through an analysis of information management strategies and their application in promoting physical activity through social media.

As an example, the amount of research conducted on how user interaction and behavior change are influenced by content format (e.g., videos vs images) or timing of posts is limited. Moreover, little has been done to establish the influence of algorithm-based content curation on users' engagement with physical activity-related posts.

2.5. Contribution of This Study

Valuable insights for public health experts and social media marketers are provided by this study as they examine the interaction of information management and user engagement in physical activity promotion. The findings can be used to develop better social media strategies that support healthy behavior. This work also offers a comprehensive framework for understanding how information management techniques could be optimized to improve participation and initiate behavioural change thus contributing to the wider field of health communication.

This study will be helpful in formulating targeted interventions to be used on various social media platforms while other effective practices and content strategies are identified. It also offers relevant advice concerning the best ways of using such materials for advancing health promotion through online tools. The findings uncovered through this research not only help in the development of a theoretical framework that explains how social media may facilitate health promotion but also suggest practical recommendations for application of evidence-based strategies which can lead to better results in promoting fitness activities and public health.

3. Methodology

Research Design and Approach

This study uses a mixed-methods approach, which involves both quantitative

and qualitative data to have a wide-ranging view of the research question. The quantitative part will focus on studying social media engagement metrics, while the qualitative one will involve interviews with social media managers and users [11]. By combining numerical information with in-depth qualitative insights, this mixed methods approach offers readers an elaborate analysis as to whether information management strategies can assist in promoting physical activities.

The quantitative analysis gives unbiased ways of measuring engagement, such as likes, shares, comments, and click-through rates that show patterns and trends among users. At the same time, qualitative interviews provide a context and more profound understanding of the experiences and perceptions of social media managers as well as users thereby explaining how effective different strategies are or what motivates people to engage.

4. Data Collection Methods

4.1. Surveys

Data on engaging in physical activity on social platforms were collected through surveys that targeted the users. The questionnaire covered issues of demographics, patterns of using social media and opinions with regard to physical activities [12]. Surveys were created in such a way as to enable them to gather a wide range of data from how frequently they use social media sites, the types of physical activities they partake in through these sites and how this influences their exercise routine.

To be more specific, questions were designed in such a way that they could bring about precise words on how regularly users interact with fitness-associated posts, whether their motivation is affected by it and if they are happy with the information given them. The study also intended to establish the challenges as well as facilitators experienced by individuals when accessing physical activity materials through social media platforms.

4.2. Reliability and Validity of the Questionnaire

Various measures were taken to maintain the reliability and validity of the questionnaire; these include the following. In a bid to ensure reliability, the questionnaire was pilot tested on a sample of respondents who were characteristic of the target population, and thus the subject has used the test retest reliability coefficient in an attempt to assess the stability of responses.

For validity, both content and construct validity were prioritized. Subject matter experts reviewed the questions to ensure they accurately covered the intended domains, such as user interaction with fitness-related posts and the influence of social media on physical activity behavior. Construct validity was verified by comparing the survey results with existing literature and theories related to social media engagement and physical activity, ensuring that the questionnaire effectively measured the intended concepts.

4.3. Social Media Analytics

Various social media platforms provided engagement metrics, which were likes, shares, comments and click-through rates. The data helps to understand how users interact with content on physical activity and the effectiveness of different information management strategies [13]. More advanced analytic tools in addition to basic engagement indicators enabled tracking of sentiment analysis in user's comments and the role of various content forms in boosting commitment levels.

5. Description of Participants

Demographics of Social Media Users

Some frequent user categories that were commonly sampled, were age, gender and geographical location across the globe. The fact that studies are conducted with people from all backgrounds has an added advantage for embracing diversity and generalization of results.

6. Tools and Instruments Used

6.1. Engagement Metrics

Facebook, Twitter, and Instagram overview statistics as well as checking data regarding users' activation were used for gathering the required data. Such tools give more information about user engagement with the content of the website such as likes, comments, shares, click through rates, etc. [14]. In addition to these tools available only in the particular platforms, some third-party analytical tools were used to get an overall picture of the engagement in various SMs. Some of these metrics include likes, shares, followers, responses, impressions, clicks, and comments of videos or posts, among others; therefore, they can be summed and contrasted to distinguish patterns that may not be obvious when reviewing each application independently. From this study, it is possible to identify that data integration from several sources has contributed to the identification of rather popular types of content and posting methods for various audiences in the selected social media.

6.2. Activity Tracking

This research involves fitness tracking applications such as Fitbit, and MyFitnessPal. These applications gather information like steps, calories, and active minutes that can be correlated to the commitment on social media [15]. With such fitness tracking apps, it was possible to have follow-up in longitudinal data provided the physical activity changes over time. This approach allowed for the direct comparison of exercise behaviors before and after exposure to specific campaign or post in question, thus facilitating the investigation of the effects of social media campaigns on people exercise patterns.

6.3. Procedure and Timeline

The study took six months and the data was collected in three parts. First of all,

surveys were distributed and before that baseline data on social media usage as well physical activity was collected. It also included following up on engagement metrics and physical activity levels. The research ended with interviews together with a data analysis. Every phase was well organized to secure the authenticity of the information gathered. In the first stage, questionnaires were given out to various participants aimed at establishing their experiences concerning social media use as well as exercise routines [16].

This time frame facilitated the ability to observe trends and patterns in real-time, giving a live view of how social media interactions can affect behaviour. In the final stage, qualitative interviews were performed for detailed insights into what participants see and feel about themselves that help to interpret quantitative data.

7. Data Analysis Methods

7.1. Statistical Analysis

SPSS software was used to analyze the quantitative data. It summarized the data using descriptive statistics and identified relations between variables, like regression analysis in the inferential statistics. Not only regression analyses but also correlation analyses were done to ascertain how strong and where social media engagement metrics are related with physical activity levels. ANOVA tests whether there were significant differences in physical activity levels based on level of social media interaction or type of content consumed. Data were checked for normality and transformed accordingly to ensure robustness of [17].

7.2. Content Analysis

The interviews were coded and the qualitative data analyzed by means of content analysis. The findings which emerged showed that identification of patterns and themes in the data that related to information management as well as user engagement was achieved through coding. This code process was done over again with different rounds of analysis in order to refine and categorize emerging themes. Originally, open coding was used to capture a broad range of responses while axial coding linked up related concepts and identified main themes at a later stage [18]. Among the themes that appeared are such issues as individualized content significance, role of community support in fostering engagement, and how timely and relevant information affects motivation by users to keep their activity going on.

7.3. Interview Guidelines and Sample Size

The interviews conducted were analysed using content analysis to understand the relationship between information management and users on social media platforms on behaviour towards physical activities. The interview guide was structured to explore key areas such as, the interview guide was structured to explore key areas such as:

- 1) **Demographics:** Age, gender, and social media usage patterns.

2) Social Media Interaction: Frequency of interaction with fitness-related content, types of content preferred, and platforms used.

3) Motivation and Engagement: Factors that motivate users to engage with physical activity content, the role of community support, and perceived barriers to engagement.

4) Content Relevance and Timeliness: Perception of the relevance and timeliness of the information provided and its impact on users' physical activity levels.

5) Behavioral Changes: Whether social media interaction has led to any changes in physical activity behavior and how users have integrated these changes into their routines.

The interviews were conducted with 20 participants who were chosen to have qualitative variation in their usage of social media and age. The small size of the sample was suitable for the study as it made it easy to exhaust theme related to information management and engagement so that patterns and insights could be effectively coded.

8. Results

8.1. Presentation of Findings

Dividing into two parts: quantitative survey and social media analytics result, and qualitative interview findings. Researches that comprise of the above data show that there is a pronounced relationship between social media usage and physical activities. The survey found that respondents who instead followed health-related information on social media had higher motivation levels than those who did not.

8.2. Quantitative Survey and Social Media Analytics Results

The survey and the results of analysis of social medial platforms confirmed many crucial observations about the correlation between the use of social media sites and participation in physical activity. particularly, out of the respondents who follow health related content on the social media, 75% of the respondents showed higher motivation towards physical exercise than the 45% of the respondents who did not follow such content. Furthermore, if the post incorporated a visual component such as a video or an infographic it received 60% more engagement (likes, shares and comments) to posts that had no such element.

8.3. Qualitative Interview Findings

The interviews that were conducted also supported the understanding of the importance of how the content is presented to encourage physical activity. In line with their practice, participants reported that photos and videos were very important and influenced their behavior towards the fitness communication and sharing. More importantly, 80% of the interviewed stated that observing others' progress through such content was the reason for starting or continuing with exercising. Furthermore, 70% of participants pointed out on the effectiveness of the confinement method in which they stated if they disclose their own fitness journey as

well as the barriers and accomplishments in this process, it not only ensures accountability but also promotes the participants to be involved in the similar activities.

8.4. Analysis of Engagement Metrics

A study of metrics on commitment denoted that the most engaged posts had both visually attractive and inspirational messages. Posts that contained UGC, such as personal achievements and fitness challenges, also demonstrated higher levels of involvement. Moreover, other analyses implied that engagement rates are significantly influenced by the time and frequency of posting [19]. On comparison, there were interactions with more content shared during peak activity hours which usually occur in the early morning or late evening when users are most active on their social media, than posts made during off-peak times

8.5. Physical Activity Behaviors Observed

According to recordings from fitness monitoring applications, there was a connection between social media engagement and exercise levels. Individuals who used to engage with work out matters on social media said they did more workouts in reality than others. Also, the study found that those people who are in social media platforms where physical activities are discussed only not only enhanced their frequency of exercise but showed more adherence to workout regimen and fitness objectives.

8.6. Key Trends and Patterns

The data revealed a number of key trends. Firstly, it appears that personalized and relatable content attracts users the most. Secondly, social media communities have a vital role in supporting and motivating individuals for physical activities. Lastly, information management strategies including combination of motivational contents, such as challenges and user-generated content are the most effective in enhancing engagement and promoting physical activity.

9. Discussion

9.1. Interpretation of Results

The reference is that proper IM in social media can result in high users' interaction and support of physical actions. There is a considerable effect when using targeted content that reflects and connects with the users' lifestyles and preferences [19]. In addition, the research findings presented here argue that including various forms of content like motivational messages, fitness activities, users' submissions in the context of community makes the environment of the application more inspiring and encouraging for its users. This manifold approach does not only cater to different user preferences but also strengthens the process of behavior change through continuous encouragement and positive reinforcement. The real-time feedbacks and interactive features of social media further improve this aspect by enabling users to track their progress, receive immediate support and adjust based

on interaction with others.

9.2. Implications for Social Media Strategies

The authorities of public health and social media should therefore focus on the production of personal, stimulating and creating an atmosphere of people using the social media. In addition, using UGC and holding the fitness competitions can also be an effective way of increasing the engagement of the audience towards exercising. For this reason, it is evident that data analytics should be incorporated into the process to guarantee that the progress is checked periodically, and the social media plans modified. The information obtained through quantitative engagement and qualitative feedback of the users can be compiled and studied to identify the preferred mode of content delivery by the target market. This cyclic process ensures that content stays relevant plus interesting over time and hence is more effective in encouraging the business's physical activity.

9.3. Comparison with Existing Literature

This study's discoveries are in line with the present body of literature on how social media can be used as a tool for behavior modification. The role of personalized content and support networks within communities has been established by previous researches. Notably, this project expands upon existing work by providing an in-depth analysis of how information management strategies can be optimized for enhanced engagement and physical activity promotion [6]. This also adds to the knowledge base on social media marketing campaigns' effectiveness by emphasizing on content diversity as well as strategic timing. Rather than just suggesting that personal or community-driven information is important, this paper uncovers the specific approaches to information management that will maximize their utility. The findings of this research provide actionable insights into how different types of contents, posting times and interactive tools can be optimized to make social media more effective.

9.4. Limitations of the Study

Despite its valuable insights, this study has its limitations, too. This can lead to a biased discussion due to the use of self-reported survey data and possible lack of representation of the sample size across the total populace. Moreover, the study was focused on specific social media platforms, which may limit generalization of findings onto other platforms [18]. The other limitation is that it is just cross-sectional in nature where data is collected at one point in time thus making it difficult to determine causal relationships between social media involvement and physical activity behavior. To better understand long-term impacts of social media interactions on physical activity levels, longitudinal studies would be helpful.

9.5. Recommendations for Future Research

The future should delve more into the effects of social media on long-term

physical activity. Moreover, studies ought to be done in order to explore the impacts of varied content and the strategies employed for managing information on user engagement. Additionally, in order to get a better grasp of this area, it is important that the research is expanded to cover other types of social media platforms and different demographics [10]. Besides, there is potential for a research that can employ experimental designs so as to establish clearer causality relationships between specific information management practices and changes in physical activity.

10. Conclusions

10.1. Summary of Main Findings

The results of this study show that social media, when used for better information management purposes, can improve user participation significantly and thus encourage physical activity behavior [8]. To drive engagement, the use of personalized content and a sense of community are very important in motivating users to keep moving. On their part, these findings emphasize how visual and interactive content is key in capturing and retaining user attention.

Also, it shows that the study emphasizes on timing and consistency in content delivery. It means that well-timed posts aligned with user activity patterns can further enhance levels of engagement. In this respect, control over what has to be shared, when it should be shared and in which format the information in social media can be framed makes it possible for organizations to devise stronger messages that not only a wider target population but mobilizes them into practicing healthier lifestyles.

10.2. Importance for Public Health and Social Media Strategies

These findings underscore the envisaged prospects held out by social media as a persuasive tool for promoting physical activity and improving the standard of health among the public. Strategies utilized in the effective dissemination of information by public health institutions and marketing experts in social media platforms can assist in developing better fictions for good habit campaigns.

Thereby, public health institutions can polish their messages and tactics, using data analytics, hence making sure that the campaign does not fade away or become irrelevant over time towards behavior change motivation. This is why it has been found out that such adaptability together with its interactivity feature in social media makes it a necessity in promoting physical activity thus enhancing overall public health outcomes.

10.3. Final Thoughts on Leveraging Social Media

Social media offers distinct chances to reach and involve broader groups of people. We are able to use social media effectively by understanding information management practices, which can help in promoting physical activity and improving health outcomes. Social media will keep changing; hence, it would be important

for marketers and public health practitioners to monitor new trends and technologies that may further increase participation and behavior change.

Conflicts of Interest

The authors declare no conflicts of interest.

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